# Earthquake

## A Prevention Guide to Promote Your Personal Health and Safety

**Centers for Disease Control and Prevention (CDC)**
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## Introduction

Planning for a natural disaster will help to prevent injury and devastation. Practicing what you will do if an earthquake happens is a vital part of that planning.

While California has been the state most prone to serious earthquakes in recent years, there are many other fault zones in other areas of the United States. For example, geologists and seismologists have predicted a 97 percent chance of a major earthquake in the New Madrid seismic zone of the central United States (including Arkansas, Missouri, Tennessee, and Kentucky) between now and the year 2035. While earthquakes with the power of the one that hit the greater Los Angeles area in January 1994 are fairly rare, less severe earthquakes can interrupt your normal living patterns and cause substantial injury.

*Cracks like this one in the Summit Road area of the Santa Cruz Mountains can make roads impassable. This damage was caused by the Loma Prieta earthquake on October 17, 1989. (Photo courtesy John K Nakata, U.S. Geological Survey.)*

This pamphlet describes many specific prevention measures that can help reduce your chance of serious injury if an earthquake occurs in your area. These prevention strategies will help you and your family to recognize, prepare for, and react to earthquake hazard.

## Coming to Terms

**Earthquake:**

An earthquake is a sudden slipping or movement of a portion of the earth's crust, accompanied and followed by a series of vibrations. An aftershock is an earthquake of similar or lesser intensity that follows the main earthquake.

**Fault:**

The earth's crust slips along a fault -- an area of weakness where two sections of crust have separated. The actual movement along the fault is smaller than is popularly imagined. The crust may only move a few inches to a few feet in a severe earthquake.

**Epicenter:**

The epicenter is the area of the earth s surface directly above the origin of an earthquake.

**Seismic Waves:**

Seismic waves are vibrations that travel outward from the center of the earthquake at speeds of several miles per second. These vibrations can shake some buildings so rapidly that they collapse.

**Magnitude:**

The magnitude of an earthquake indicates how much energy was released. This energy can be measured on a recording device and graphically displayed through lines on a Richter Scale. A magnitude of 7.0 on a Richter Scale would indicate a very strong earthquake. The 1994 earthquake in the Los Angeles area had a magnitude of 6.7. Each whole number on the scale represents an increase of about 30 times the energy released. Therefore, an earthquake measuring 6.0 is about 30 times more powerful than one measuring 5.0.

# About Earthquakes

During a major earthquake, you may hear a roaring or rumbling sound that gradually grows louder. You may

feel a rolling sensation that starts out gently and, within a second or two, grows violent.

OR . . .

You may first be jarred by a violent jolt. A second or two later, you may feel shaking and find it difficult to stand up or move from one room to another.

The real key to surviving an earthquake and reducing your risk of injury lies in planning, preparing, and practicing what you and your family will do if it happens.

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# Getting Ready for an Earthquake

## Practice Drills

By planning and practicing what to do if an earthquake strikes, you and your family can learn to react correctly and automatically when the shaking begins. During an earthquake, most deaths and injuries are caused by collapsing building materials and heavy falling objects, such as bookcases, cabinets, and heating units. Learn the safe spots in each room of your home. If you have children, get the entire family to practice going to these locations. Participating in an earthquake drill will help children understand what to do in case you are not with them during an earthquake.

Make sure you and your child also understand the school's emergency procedures for disasters. This will help you coordinate where, when, and how to reunite with your child after an earthquake.

During your earthquake drill:

- Get under a sturdy table or desk and hold on to it.
- If you're not near a table or desk, cover your face and head with your arms; and
    - stand or crouch in a strongly supported doorway OR . . .
    - brace yourself in an inside corner of the house or building.
- Stay clear of windows or glass that could shatter or objects that could fall on you.
- Remember: If inside, stay inside. Many people are injured at entrances of buildings by falling debris.

## Evacuation Plans

If an earthquake occurs, you may need to evacuate a damaged area afterward. By planning and practicing for evacuation, you will be better prepared to respond appropriately and efficiently to signs of danger or to directions by civil authorities.

- Take a few minutes with your family to discuss a home evacuation plan. Sketch a floor plan of your

home; walk through each room and discuss evacuation details.

- Plan a second way to exit from each room or area, if possible. If you need special equipment, such as a rope ladder, mark where it is located.
- Mark where your emergency food, water, first aid kits, and fire extinguishers are located.
- Mark where the utility switches or valves are located so that they can be turned off, if possible.
- Indicate the location of your family's emergency outdoor meeting place.

## Establish Priorities

Take time before an earthquake strikes to write an emergency priority list, including:

- important items to be hand-carried by you
- other items, in order of importance to you and your family
- items to be removed by car or truck if one is available
- things to do if time permits, such as locking doors and windows, turning off the utilities, etc.

## Write Down Important Information

Make a list of important information and put it in a secure location. Include on your list:

- important telephone numbers, such as police, fire, paramedics, and medical centers
- the names, addresses, and telephone numbers of your insurance agents, including policy types and numbers
- the telephone numbers of the electric, gas, and water companies
- the names and telephone numbers of neighbors
- the name and telephone number of your landlord or property manager
- important medical information, such as allergies, regular medications, etc.
- the vehicle identification number, year, model, and license number of your automobile, boat, RV, etc.
- your bank's or credit union's telephone number, account types, and numbers
- radio and television broadcast stations to tune to for emergency broadcast information

*NOTE:* There is a form on the back cover of this pamphlet for listing important telephone numbers and other

information.

## Gather and Store Important Documents in a Fire-Proof Safe

- Birth certificates
- Ownership certificates (automobiles, boats, etc.)
- Social Security cards
- Insurance policies
- Wills
- Household inventory, including:
  - list of contents
  - photographs of contents of every room
  - photographs of items of high value, such as jewelry, paintings, collectors' items

## Emergency Supplies

Stock up now on emergency supplies that can be used after an earthquake. These supplies should include a first aid kit, survival kits for the home, automobile, and workplace, and emergency water and food. Store enough supplies to last at least 3 days.

### First Aid Kit

Store your first aid supplies in a tool box or fishing tackle box so they will be easy to carry and protected from water. Inspect your kit regularly and keep it freshly stocked. NOTE: Important medical information and most prescriptions can be stored in the refrigerator, which also provides excellent protection from fires.

**Drugs/Medications**

- Hydrogen peroxide to wash and disinfect wounds
- Antibiotic ointment
- Individually wrapped alcohol swabs
- Aspirin and non-aspirin tablets
- Prescriptions and any long-term medications (keep these current)
- Diarrhea medicine
- Eye drops

**Dressings**

- Bandage strips
- Ace bandages
- Rolled gauze
- Cotton-tipped swabs
- Adhesive tape roll

**Other First Aid Supplies**

- First aid book
- Scissors
- Tweezers
- Thermometer
- Bar soap
- Tissues
- Sunscreen
- Paper cups
- Pocket knife
- Small plastic bags
- Safety pins
- Needle and thread
- Instant cold packs for sprains
- Sanitary napkins
- Splinting materials

## Survival Kit or Your Home

Assemble a survival kit for your home with the following items:

**Tools and supplies**

- ax, shovel, broom
- screwdriver, pliers, hammer, adjustable wrench
- rope for towing or rescue
- plastic sheeting and tape

**Items for safety and comfort**

- sturdy shoes that can provide protection from broken glass, nails, and other debris
- gloves (heavy and durable for cleaning up debris)
- candles
- waterproof matches
- change of clothing
- knife
- garden hose (for siphoning and firefighting)
- tent
- recreational supplies for children and adults
- blankets or sleeping bags
- portable radio, flashlight, and extra batteries
- essential medications and eyeglasses

- fire extinguisher -- multipurpose, dry chemical type
- food and water for pets
- toilet tissue
- cash

## Survival Kit or Your Automobile

Assemble a survival kit for your automobile with the following items. Storing some of these supplies in a small bag or backpack will make them more convenient to carry if you need to walk.

- Blankets
- Bottled water
- Change of clothes
- Coins for telephone calls
- Fire extinguisher -- multipurpose, dry chemical type
- First aid kit and manual
- Emergency signal device (light sticks, battery-type flasher, reflector, etc.)
- Flashlight with fresh batteries
- Food (nonperishable -- nutrition bars, trail mix, etc.)
- Gloves
- Local map and compass
- Rope for towing, rescue, etc.
- Paper and pencils
- Premoistened towelettes
- Prescription medicines
- Battery-operated radio with fresh batteries
- Small mirror for signaling
- Toilet tissue
- Tools (pliers, adjustable wrench, screwdriver, etc.)
- Whistle for signaling
- Jumper cables
- Duct tape

## Survival Kit or Your Workplace

Assemble a survival kit for the workplace with the following supplies:

- Food (nonperishable -- nutrition bars, trail mix, etc.)
- Bottled water
- Jacket or sweatshirt
- Pair of sturdy shoes
- Flashlight with fresh batteries
- Battery-operated radio with fresh batteries
- Essential medications
- Blanket
- Small first aid kit
- Extra pair of eyeglasses and/or contact lens solution
- Whistle or other signaling device

**Emergency Water Storage And Purification**

Following are recommendations for storing and purifying water supplies.

- The minimum drinking water supply is 1 gallon per person per day. You will also need water for food preparation, bathing, brushing teeth, and dish washing. Store a 3-5 day supply of water (at least 5 gallons for each person).
- Water should be stored in sturdy plastic bottles with tight-fitting lids. Rinsed chlorine bleach bottles work well. Plastic containers for juice and milk do not work as well because they tend to crack and leak more readily.
- Stored water should be changed every 6 months.
- Avoid placing water containers in areas where toxic substances, such as gasoline and pesticides, are present. Vapors may penetrate the plastic over time.
- Do not store water containers in direct sunlight. Select a place with a fairly constant, cool temperature.

**Safe Water Sources In The Home**

If you do not have enough water stored, there are sources in your home that may provide safe, clean water for drinking purposes.

- Water drained from the water heater faucet, if the water heater has not been damaged.
- Water dipped from the tank of the toilet (not the bowl). The water in the bowl can be used for pets. Do not use water that has been chemically treated or "blue" water.

- Melted ice cubes.
- Canned fruit, vegetable juice, and liquids from other canned goods.
- Water from the swimming pool. Use this water only after other sources of pure water are exhausted.

**Unsafe Water Sources**

Never use water from the sources listed below for drinking.

- Radiators
- Hot water boilers (home heating system)
- Water beds (fungicides added to the water or chemicals in the vinyl may make water unsafe for use)

*NOTE:* Remember that carbonated beverages do not meet drinking water requirements. Caffeinated drinks and alcohol dehydrate the body, which increases the need for drinking water.

**Water for Drinking and Cooking**

Safe drinking water includes bottled, boiled, or treated water. Your state or local health department can make specific recommendations for boiling or treating drinking water in your area. Here are some general rules concerning water for drinking and cooking. Remember:

- Do not use contaminated water to wash dishes, brush your teeth, wash and prepare food, or make ice.
- If you use bottled water, make sure the seal has not been broken. Otherwise, water should be boiled or treated before use. Drink only bottled, boiled, or treated water until your supply is tested and found safe.
- Boiling water kills harmful bacteria and parasites. Bringing water to a rolling boil for 1 minute will kill most organisms.
- Treat water with chlorine or iodine tablets or mix six drops (1/8 teaspoon) of unscented, ordinary household chlorine bleach per gallon of water. Mix the solution thoroughly, and let stand for about 30 minutes. However, this treatment will not kill parasitic organisms.

Containers for water should be rinsed with a bleach solution before using and reusing. Use water storage tanks and other types of containers with caution. For example, fire truck storage tanks, as well as previously used cans or bottles, can be contaminated with microbes or chemicals.

**Emergency Food**

Keep foods that:

- have a long storage life
- require little or no cooking, water, or refrigeration, in case utilities are disrupted
- meet the needs of babies or other family members who are on special diets
- meet pets' needs
- are not very salty or spicy, as these foods increase the need for drinking water, which may be in short supply

**How To Store Emergency Food**

- A disaster can easily disrupt the food supply at any time, so plan to have at least a 3-day supply of food on hand.
- When storing food, it is not necessary to buy dehydrated or other types of emergency food. Canned foods and dry mixes will remain fresh for about 2 years.
- Certain storage conditions can enhance the shelf life of canned or dried foods. The ideal location is a cool, dry, dark place. The best temperature is 40 to 60°F. Keep foods away from ranges or refrigerator exhausts. Heat causes many foods to spoil more quickly.
- Keep food away from petroleum products, such as gasoline, oil, paints, and solvents. Some food products absorb their smell.
- Protect food from rodents and insects. Items stored in boxes or in paper cartons will keep longer if they are heavily wrapped or stored in airtight containers.
- Date all food items. Use and replace food before it loses freshness.

**How To Use Emergency Food**

- Use perishable food in your refrigerator or freezer before using food in your emergency supplies.
- Discard cooked, unrefrigerated foods after 2 hours at room temperature, regardless of appearance.
- Eat only foods that have a normal color, texture, and odor.
- Discard cans that bulge at the ends or that are leaking.

**Preparing Food**

Preparing food after an earthquake may be complicated by damage to your home and loss of electricity, gas, and water. The following items will help you to prepare meals safely:

- Cooking utensils

- Knives, forks, and spoons
- Paper plates, cups, and towels
- A manual can- and bottle-opener
- Heavy-duty aluminum foil
- Gas or charcoal grill; camp stove
- Fuel for cooking, such as charcoal. (*CAUTION:* Never burn charcoal indoors. The fumes are deadly when concentrated indoors.)

*NOTE:* Do not use your fireplace for cooking until the chimney has been inspected for cracks and damage. Sparks may escape into your attic through an undetected crack and start a fire.

### Getting Back Together After the Earthquake

An earthquake could occur when your family is not together. Members of your family may be at home, work, shopping, or at school. Take a few minutes with your family to establish a plan for how and when to reunite after an earthquake.

- List two or thrce places within walking distance of your home, such as neighbors' or nearby relatives' homes, local schools, churches, or community centers. If you arrive at home and nobody is there, the list will give you places to start looking for family members.
- Choose a relative who lives at least 100 miles away who can be contacted by all family members if it becomes impossible to reach reunion locations. You can tell them where you are and how you are, and you can learn the location of other family members. You and your family should carry this number with you.

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## Inspecting for Possible Home Hazards

An important step in earthquake preparedness is to inspect your home and its surroundings for possible hazards and then take action to lessen those hazards. Remember: anything can move, fall, or break during an earthquake or its aftershocks.

The following is a basic checklist to help you identify and correct possible home hazards.

### Rooms In the Home

Look for the following hazards in each room:

- Windows and other glass that might shatter

- Unanchored bookcases, cabinets, refrigerators, water heaters, and other furniture that might topple
- Heating units, fireplaces, chimneys, and stoves that could move or fall
- Areas that could be blocked by falling debris

**Securing Appliances**

- Secure your large appliances with flexible cable, braided wire, or metal strapping.
- Install flexible gas and water connections on all gas appliances. This will significantly reduce your chances of having a major fire after an earthquake.
- Brace and support air conditioners, particularly those on rooftops.

The typical water heater weighs about 450 pounds when full. In an earthquake, the floor on which it is standing tends to move out from under the heater, often causing it to topple. The movement can also break the gas, electric, and water-line connectors, posing fire or electric shock hazards, and can shatter the glass lining within the water heater.

Here are two suggestions on how to secure your water heater:

1. Wrap at least a 1 /2-inch wide metal strap around the top of the water heater and attach it to wall studs with 3-inch lag screws. Attach another strap about 2/3 of the way down from the top of the water heater. OR...
2. Wrap steel plumber's tape around the entire water heater at least twice. Then secure the tape to two different wall studs with 3-inch lag screws.

**Securing Items in the Bathroom**

Replace glass bottles from your medicine cabinet and around the bathtub with plastic containers.

**Hanging And Overhead Items**

- Inspect and anchor overhead light fixtures, such as chandeliers.
- Move heavy mirrors and pictures hanging above beds, chairs, and other places where you sit or sleep. Otherwise, anchor these items with wire through eyescrews bolted into wall studs. Or place screws on both sides, top, and bottom of the frame and screw these into the studs.
- Determine whether the full swing of your hanging lamps or plants will strike a window. If so, move them.
- Secure hanging objects by closing the opening of the hook.
- Replace heavy ceramic or glass hanging planters with light-weight plastic or wicker baskets.

**Shelves, Cabinets, And Furniture**

- Identify top-heavy, free-standing furniture, such as bookcases and china cabinets, that could topple in an earthquake.
- Secure your furniture by using:
    - "L" brackets, corner brackets, or aluminum molding to attach tall or top-heavy furniture to the wall
    - eyebolts to secure items located a short distance from the wall
- Attach a wooden or metal guardrail on open shelves to keep items from sliding or falling off. Fishing line can also be used as a less-visible means of securing an item.
- Place heavy or large objects on lower shelves.
- Use Velcro®-type fastenings to secure some items to their shelves.
- Secure your cabinet doors by installing sliding bolts or childproof latches.

**Hazardous Materials**

Identify poisons, solvents, or toxic materials in breakable containers and move these containers to a safe, well-ventilated storage area. Keep them away from your water storage and out of reach of children and pets.

## Inspecting And Securing Your Home's Structure

Examine the structural safety of your house. If your house is of conventional wood construction, it will probably be relatively resistant to earthquake damage, particularly if it is a single-story structure.

For information on structural safety standards and qualified contractors in your area, contact your city or county government office on community development or building code enforcement.

The following suggestions will take an investment of time and money but will add stability to your home. If you want to do the work yourself, many hardware or home-improvement stores will assist you with information and instructions.

**Foundation**

Check to see if your house or garage is securely fastened to the foundation. (If your house was built before 1950, it probably does not have bolts securing the wood structure to the concrete foundation.) If your house is not secured to the foundation, take the following steps:

- Using a hammer drill and carbide bit, drill a hole through the sill plate into the foundation. Holes should

be approximately 6 feet apart.

- Drop a 1/2- x 7-inch expansion bolt into each hole and finish by tightening the nut and washer.

**Beams, Posts, Joists, and Plates**

Strengthen the areas of connection between beams, posts, joists, and plates using the following hardware:

- "T" and "L" straps
- Mending plates
- Joist hangers
- Twin post caps
- Nails and lag screws

Pay particular attention to exposed framing in garages, basements, porches, and patio covers.

**Roof and Chimney**

- Check your chimney or roof for loose tiles and bricks that could fall in an earthquake. Repair loose tiles or bricks, as needed.

- Protect yourself from falling chimney bricks that might penetrate the roof, by reinforcing the ceiling immediately surrounding the chimney with 3/4-inch plywood nailed to ceiling joists.

**Learning to Shut Off Utilities**

- Know where and how to shut off utilities at the main switches or valves. Check with your local utility companies for instructions.

- Teach all family members how and when to shut off utilities.

**Gas**

- An automatic valve (Earthquake Command System) is commercially available that will turn the gas off for you in the event of an earthquake.

- After an earthquake, DO NOT USE matches, lighters, or appliances, and do not operate light switches until you are sure there are no gas leaks. Sparks from electrical switches could ignite gas, causing an explosion.

- If you smell the odor of gas, or if you notice a large consumption of gas being registered on the gas meter, shut off the gas immediately. First, find the main shut-off valve, located on a pipe next to the gas meter. Use an adjustable wrench to turn the valve to the off position.

**Electricity**

After a major disaster, shut off the electricity. Sparks from electrical switches could pose a shock or fire hazard. Carefully turn off the electricity at the main electrical breaker in your home.

**Water**

Water may be turned off at either of two locations:

1. At the main meter, which controls the water flow to the entire property; or
2. At the water main leading into the home. (Shutting off the water here retains the water supply in your water heater, which may be useful in an emergency.)

Attach a valve wrench to the water line. (This tool can be purchased at most hardware stores.) Also, label the water mains for quick identification.

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# During an Earthquake

## Indoor Safety

There are actions you can take, even while an earthquake is happening, that will reduce your chances of being hurt. Lights may be out, and hallways, stairs, and room exits may be blocked by fallen furniture, ceiling tiles, and other debris. Planning for these situations will help you to take action quickly.

- If an earthquake strikes, you may be able to take cover under a heavy desk or table. It can provide you with air space if the building collapses. If you get under a table and it moves, try to move with it.
- Inner walls or door frames are the least likely to collapse and may also shield against falling objects. If other cover is not available, go to an inner corner or doorway, away from windows or glass panels.
- Stay away from glass and hanging objects, and bookcases, china cabinets, or other large furniture that could fall. Watch for falling objects, such as bricks from fireplaces and chimneys, light fixtures, wall hangings, high shelves, and cabinets with doors that could swing open.
- Grab something to shield your head and face from falling debris and broken glass.
- If the lights go out, use a battery-operated flashlight. Don't use candles, matches, or lighters during or after the earthquake. If there is a gas leak, an explosion could result.
- If you are in the kitchen, quickly turn off the stove and take cover at the first sign of shaking.

**High-Rise Buildings**

Get under a desk and stay away from windows and outside walls. Stay in the building. The electricity may go out, and the sprinkler systems may come on. DO NOT use the elevators.

**Crowded Indoor Public Places**

If you are in a crowded public place, do not rush for the doorways. Others will have the same idea. Move away from display shelves containing objects that may fall. If you can, take cover and grab something to shield your head and face from falling debris and glass.

**Outdoor Safety**

If outdoors, move away from buildings and utility wires. The greatest danger from falling debris is just outside doorways and close to outer walls. Once in the open, stay there until the shaking stops.

**Automobiles**

If you are in a moving automobile, stop as quickly and safely as possible and move over to the shoulder or curb, away from utility poles, overhead wires, and under- or overpasses. Stay in the vehicle, set the parking brake, and turn on the radio for emergency broadcast information. A car may jiggle violently on its springs, but it is a good place to stay until the shaking stops. If you are in a life-threatening situation, you may be able to reach someone with either a cellular or an emergency roadside assistance phone.

When you drive on, watch for hazards created by the earthquake, such as breaks in the pavement, downed utility poles and wires, a fallen overpasses and bridges.

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# After an Earthquake

## Aftereffects

Be prepared for additional earth movements called "aftershocks." Although most of these are smaller than the main earthquake, some may be large enough to cause additional damage or bring down weakened structures.

Because other aftereffects can include fires, chemical spills, landslides, dam breaks, and tidal waves, be sure to monitor your battery-operated radio or TV for additional emergency information.

## Injures

Check for injuries. Do not attempt to move injured or unconscious people unless they are in immediate danger from live electrical wires, flooding, or other hazards. Internal injuries may not be evident, but may be serious or life-threatening. If someone has stopped breathing, call for medical or first aid assistance immediately and begin CPR if you are trained to do so. Stop a bleeding injury by applying direct pressure to the wound. If you are trapped, try to attract attention to your location.

## Checking Utilities

An earthquake may break gas, electrical, and water lines. If you smell gas: (1) open windows; (2) shut off the main gas valve; (3) do not turn any electrical appliances or lights on or off; (4) go outside; (5) report the leak to authorities; and (6) do not reenter the building until a utility official says it is safe to do so.

- If electric wiring is shorting out, shut off the electric current at the main box.
- If water pipes are damaged, shut off the supply at the main valve.

### Other Precautions

- Have chimneys inspected for cracks and damage. Do not use the fireplace if the chimney has any damage.
- Check to see if sewage lines are intact before using bathrooms or plumbing.
- Do not touch downed powerlines or objects in contact with downed lines. Report electrical hazards to the authorities.
- Immediately clean up spilled medicines, drugs, flammable liquids, and other potentially hazardous materials.
- Stay off all telephones except to report an emergency. Replace telephone receivers that may have been knocked off by the earthquake.
- Stay away from damaged areas. Your presence could hamper relief efforts, and you could endanger yourself.
- Cooperate fully with public safety officials. Respond to requests for volunteer assistance from police, fire fighters, emergency management officials, and relief organizations, but do not go into damaged areas unless assistance has been requested.

### Evacuating Your Home

If you must evacuate you home:

- Post a message, in a prearranged location known only to family members, indicating where you have gone.
- Confine pets to the safest location possible and make sure they have plenty of food and water. Pets will not be allowed in designated public shelters.
- Take vital documents (wills, insurance policies, etc.), emergency supplies, and extra medications with you.

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## People with Special Needs

### People with Disabilities

**Before an earthquake:**

- Write down any specific needs, limitations, and capabilities that you have, and any medications you take. Make a copy of the list and put it in your purse or wallet.
- Find someone (a spouse, roommate, friend, neighbor, relative, or co-worker) to help you in case of an emergency. Give them the list. You may wish to provide a spare key to your home, or let them know where they can find one in an emergency.

**During an earthquake:**

- If you are confined to a wheelchair, try to get under a doorway or into an inside corner, lock the wheels, and cover your head with your arms. Remove any items that are not securely attached to the wheelchair.
- If you are able, seek shelter under a sturdy table or desk. Stay away from outer walls, windows, fireplaces, and hanging objects.
- If unable to move from a bed or chair, protect yourself from falling objects by covering up with blankets and pillows.
- If you are outside, go to an open area away from trees, telephone poles, and buildings, and stay there.

**After an earthquake:**

- If you are trapped, try to attract attention to your location.
- Turn on your battery-operated TV or radio to receive emergency information and instructions.
- If you can, help others in need.

## Children's Needs

Fear is a normal reaction to danger. A child may be afraid of recurrence, injury, or death after an earthquake. They may fear being separated from their family or being left alone. Children may even interpret disasters as punishment for real or imagined misdeeds. Children will be less likely to experience prolonged fear or anxiety if they know what to expect before, during, and after an earthquake. Talking to children openly will also help them overcome fears.

Here are some suggestions:

- Explain that an earthquake is a natural event and not anyone's fault.
- Talk about your own experiences with natural disasters, or read aloud books about earthquakes.
- Encourage your child to express feelings of fear. Listen carefully and show understanding.

- Your child may need both verbal and physical reassurance that everything will be all right. Tell your child that the situation is not permanent.

- Include your child in clean-up activities. It is comforting to the child to watch the household begin to return to normal and to have a job to do.

*NOTE:* Symptoms of anxiety may not appear for weeks or even months after an earthquake, and can affect people of any age. If anxiety disrupts daily activities for any member of your family, seek professional assistance through a school counselor, community religious organization, your physician, or a licensed professional listed under "mental health services" in the yellow pages of your telephone directory.

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## Summary

Surviving an earthquake and reducing its health impact requires preparation, planning, and practice. Far in advance, you can gather emergency supplies, identify and reduce possible hazards in your home, and practice what to do during and after an earthquake. Learning what actions to take can help you and your family to remain safe and healthy in the event of an earthquake.

This information is provided by the Centers for Disease Control Prevention (CDC) through state and local health departments. It includes general disease and injury prevention guidelines that may vary slightly from state to state. Local or state health departments emergency management agencies can provide specific health advisories and recommendations about local conditions.

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## Important Names and Numbers

| | |
|---|---|
| Police | |
| Fire | |
| Gas Company | |
| Electric Utility | |
| Water Company | |
| Emergency Broadcast Stations | |
| Emergency Meeting Location | |

| | |
|---|---|
| Emergency Contact / Relative | |
| Doctors | |

*Print this separate page and write down important names and phone numbers for emergency use.*

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See also the Spanish version of this page.

**CDC Prevention Guides for Emergencies and Disasters**